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Official Title of the Study: Changes in preference for surgery of patients signed up for arthroscopic procedures: COVID-19 effect on arthroscopic patients in a university hospital in Denmark.

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## Study Protocol

Changes in preference for surgery of patients signed up for arthroscopic procedures: COVID-19 effect on arthroscopic patients in a university hospital in Denmark.

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### Background:

Covid-19 has impacted all aspects of society. In hospitals around the world focus has been on treating the deadly virus, and elective orthopedic surgical procedures has been postponed in Denmark, causing a stop for most arthroscopic procedures for months. It is established that certain conditions leading to arthroscopic orthopedic intervention has fluctuating symptoms. Amongst these conditions who are also treated with non-surgical methods are subacromial impingement[1], degenerative knee disease [2] and anterior cruciate ligament injuries[3]. An issue with further understanding the non-surgical effect on this patient group could be reluctance to undergo non-surgical treatment and prefer a surgical procedure. Because all elective surgery has been postponed in Denmark, and the following longer waiting period for surgery, this has created a unique opportunity to further investigate this patient category.

Aim of study: Investigate the impact of time on waiting list for surgery under COVID-19 pandemic on the preference for surgery in patients planned for arthroscopic surgery.

### Study design:

Cross sectional survey.

### Material

We include all patients planned for arthroscopic procedures in Zealand University Hospital Køge, who are postponed because of the Covid-19 outbreak. The patients receive information by letter, asking their preference to surgery in the waiting period.

Following baseline characteristics is noted based on the patients' medical files: age, gender, duration of symptoms, number of steroid injections, length of structured physiotherapy treatment and the date where surgery was discussed and offered to the patient.

### Inclusion criteria:

Age above 18

Patients planned for arthroscopic intervention in knee or shoulder.

Patients seen by an orthopedic surgeon and planned for surgery before 13/3-20

**Exclusion criteria:**

Surgery performed in another hospital, death and emigration.

### **Outcome measures**

The primary outcome is change of preference for surgery during the waiting period for all planned arthroscopic procedures

Secondary outcome is the difference in preference for surgery between the group of patients planned for arthroscopic surgery in the shoulder and arthroscopic surgery in the knee.

### **Patient dropout and protocol violations**

Non responders will be contacted by telephone up to two times and will be noted.

### **Statistical analysis plan**

The study is an observational study and Excel and SPSS will be used to describe and analyze the results.

### **Hypotheses**

The null hypothesis is:

- 1: Patients on waiting list planned for arthroscopic procedures will not change preferences for surgery.
- 2: Patients planned for shoulder arthroscopy are not more likely to change preference to surgery than patients planned for knee arthroscopy.

**Data analysis:**

Descriptive statistics will be used to report demographic data and results. Differences in demographic data and outcome measures between the groups will be compared using parametric (Student's t-test) The level of statistical significance is set at  $P < 0.05$ .

The level of clinically relevant significance is set at 10% change in preference for surgery for the whole group of patients planned for arthroscopic procedures.

The level of clinically relevant significance is set at 20% difference between the groups of patients planned for subacromial decompression compared to the group planned for other arthroscopic procedures.

Non responders will be included in a separate sensitivity analysis as patients who changed preference for surgery.

## Discussion

The study will provide information on the change of preferences for arthroscopic surgery in a patient population who are forced to wait for surgery for a longer period of time, with no possibility of seeking treatment in other hospitals.

## **Availability of data and materials**

All study-related information on participants will be stored securely on the study site. Study data will be collected and stored in a secure folder.

- [1] W. Dong *et al.*, "Treatments for shoulder impingement syndrome a prisma systematic review and network meta-analysis," *Medicine (United States)*, vol. 94, no. 10. Lippincott Williams and Wilkins, p. e510, 01-Mar-2015.
- [2] R. Brignardello-Petersen *et al.*, "Knee arthroscopy versus conservative management in patients with degenerative knee disease: A systematic review," *BMJ Open*, vol. 7, no. 5. BMJ Publishing Group, p. e016114, 01-May-2017.
- [3] A. P. Monk, L. J. Davies, S. Hopewell, K. Harris, D. J. Beard, and A. J. Price, "Surgical versus conservative interventions for treating anterior cruciate ligament injuries," *Cochrane Database of Systematic Reviews*, vol. 2016, no. 4. John Wiley and Sons Ltd, 03-Apr-2016.